

Agenda

Tuesday, May 04, 2010, 19.00 to 20:30

Vienna, Austria

Room: Seminarraum (SEM 124), Vienna University of
Technology

Institute of Geodesy and Geophysics, Advanced Geodesy
(128-1)

Gusshausstr. 27-29

Room No. CB 0308, 3rd floor

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|---|----------------------|
| 1. Welcome and Introduction | Randy Ricklefs |
| 2. Membership | Randy Ricklefs |
| 3. Refraction Study Group Report | Erricos Pavlis |
| 4. Formats Study Group Report | Randy Ricklefs |
| - CRD implementation status | Randy Ricklefs |
| - tracking restrictions | Randy Ricklefs |
| - consolidation of ILRS OC quality checks | C. Noll, R. Ricklefs |
| - full rate data handling and transfer | Randy Ricklefs |
| - sample normal point programme | Randy Ricklefs |
| - criteria for rejection of CRD files | Christian Schwatke |
| 5. Quarantining of data from new stations | Mike Pearlman |

International Laser Ranging Service Data Formats & Procedures WG Members

ILRS e-mail exploder: ilrs-dfpwg@lists.nasa.gov

Chairman: Wolfgang Seemueller

Co-Chairman: Randy Ricklefs

New Members:

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- Christian Schwatke
- Florent Deleflie

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Data Formats and Procedures Working Group

Vienna
4 May 2010

R. Ricklefs

1. CRD status
2. Tracking Restrictions Questionnaire
3. Data QC and file system harmonization
4. Full rate data handling
5. Sample code

CRD format status

- Conversion deadline is now June 30, 2010
- 25 stations are now submitting CRD-formatted normal points
 - 12 stations have been validated
 - 10 stations are awaiting analyst validation
 - 3 stations are awaiting OC validation
- 5 stations are known to be in coding/testing
- 10 stations are unaccounted for
- 6 AWG analysis centers are known to be able to handle CRD data, with 5 helping with the validation chores.
- ~7 stations are submitting CRD full rate data for T2L2
- 10 stations are submitting CRD full rate data for LRO, and the LRO/LR SOC is working to produce CRD normal points.

CRD format implementation

- All EDC OC's validated stations still need to provide normal points in CRD and old format. EDC is working on this.
- EDC is sending in CRD normal points 2-3 days later than the old normal points. EDC is work on this.
- Both OCs are now sending bad CRD normal points back to the stations for correction before distribution.
- Stations should not innovate data field values not already available in old format, e.g. 2 digits values in “Station Epoch Time Scales.” Some still are.

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Satellite tracking restrictions

- Missions using restrictions (a reminder...):
 - Elevation: ICESat
 - Go/no-go: ICESat, ALOS, LRO, LLR
 - Pass segments: GP-B, ALOS
 - Power: LRO
- LLR go/no-go not yet implemented: A list of avoidance times for each reflector is distributed, often on a daily basis.
- Survey was sent by CB to all ranging stations in January 2009; there have been at least 4 reminders; **several stations cannot be reached; several stations have been asked for updates**
- Survey results are on the ILRS web site

Satellite tracking restrictions status

- 28 ILRS stations responded (plus Mark Davis for Stafford)
- 15 have automated elevation restrictions implemented
 - 9 plan to implement
- 16 have automated go/no-go implemented
 - 9 plan to implement
- 14 have automated pass segments implemented
 - 10 plan to implement
- 2 has automated power restrictions implemented
 - 11 plan to implement
 - 15 have some level of manual control of laser power or beam divergence.
- Some have promised to implement certain restriction when it becomes necessary.

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File System and Normal Point QC Harmonization

- Agreed in Metsovo to harmonize CRD directory structure at EDC and CDDIS: change EDC – done (normal point and full rate)
- Agreed that all daily files should contain only data from that day: change CDDIS handling – not done
- Harmonize QC checks at EDC/OC and NASA/OC: comparison shows that both perform the same checks as on the ILRS web site, but EDC does more format checks and may be missing one check NASA does.
- Be sure OCs send bad data back to station for correction. Both do, now.
- Be sure OCs quarantine data from stations after upgrade: to be discussed later in this meeting.

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Full Rate Data

- How do we distribute full rate data, given the increase volume from kHz fire-rate stations?
- Largest kHz passes at Graz are about 1.7 Mb compressed, giving 690 Mb/month (based on average 406 passes/month). This would fit on a CD. (Thanks, Matt!)
- If Yarragadee were a kHz station, this could be 1.9 Gb/month (based on 1130 passes/month). This would fit on a DVD.
- Experience at Hersmonceaux and NASA stations show that daily uploads of full rate data are quite “do-able.” Media mails are a hassle.
- Internet transfer will be the recommended transfer method.

Harmonizing Full Rate Handling

- Can EDC and CDDIS handle the archive of kHz full-rate data?
- Automate the transfer of full-rate data (both formats if possible) from EDC to CDDIS on a daily basis

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Sample Code - Motivation

- Stop reinventing the wheel
- Provides more consistency and quality control
- Easy access so they will be used

Sample Code - Existing

- CPF routines and programs
 - Read/write/interpolation routines
 - Format checker
 - scheduler, converter
- CRD routines and programs
 - Read/write routines
 - Converters
 - Format checker
- Distrib (statistics of a data distribution); refraction routines.
- Npcheck (check normal point consistency)
- Star and solar system routines/ephemeris (USNO/JPL)

Sample Code – Future

- Normal point program
 - A generic normal-point processor was available, but has been withdrawn
 - Who can supply one?
- Other candidates?
 - Cal solutions?

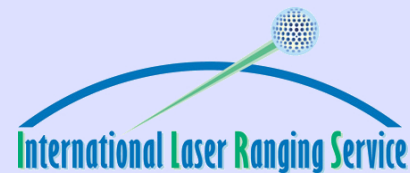
Backup Slides...

Data Formats & Procedures

Working Group Report

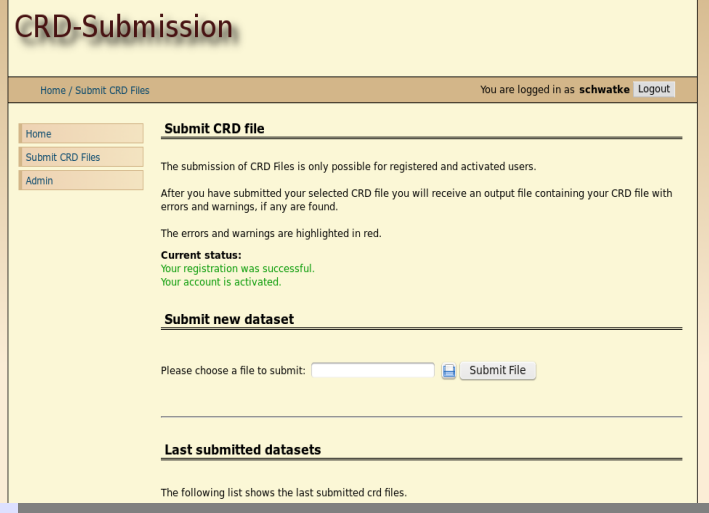
Activities of EDC OC - CRD Check and Rejection of CRD Files

Wolfgang Seemüller and Christian Schwatke



Online Check for CRD Files

- Web page to check CRD Files
- URL: www.dgfi.badw.de/crd_check/
- CRD Check will be included in the Web Page of <http://ilrs.dgfi.badw.de> in future
- Currently 34 registered users



CRD-Submission

Home / Submit CRD Files You are logged in as **schwatke** Logout

Home
Submit CRD Files
Admin

Submit CRD file

The submission of CRD Files is only possible for registered and activated users.

After you have submitted your selected CRD file you will receive an output file containing your CRD file with errors and warnings, if any are found.

The errors and warnings are highlighted in red.

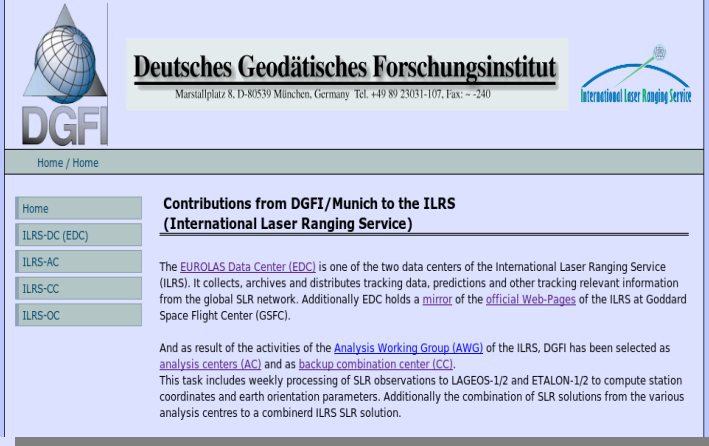
Current status:
Your registration was successful.
Your account is activated.


Submit new dataset


Please choose a file to submit:

Last submitted datasets

The following list shows the last submitted crd files.



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Home / Home

Home
ILRS-DC (EDC)
ILRS-AC
ILRS-CC
ILRS-OC

**Contributions from DGFI/Munich to the ILRS
(International Laser Ranging Service)**

The [EUROLAS Data Center \(EDC\)](#) is one of the two data centers of the International Laser Ranging Service (ILRS). It collects, archives and distributes tracking data, predictions and other tracking relevant information from the global SLR network. Additionally EDC holds a [mirror](#) of the [official Web-Pages](#) of the ILRS at Goddard Space Flight Center (GSFC).

And as result of the activities of the [Analysis Working Group \(AWG\)](#) of the ILRS, DGFI has been selected as [analysis centers \(AC\)](#) and as [backup combination center \(CC\)](#).
This task includes weekly processing of SLR observations to LAGEOS-1/2 and ETALON-1/2 to compute station coordinates and earth orientation parameters. Additionally the combination of SLR solutions from the various analysis centres to a combined ILRS SLR solution.

CRD Check Programme

- The check programme detects all possible errors in CRD files with regard to CRD Specification of Version 1.01
- Full-rate data can also be checked (not all checked at EDC OC)
- Multi-pass files can also be checked (still some questions to be solved)
- Errors were corrected, when it was easy, and a message was sent to the station manager
- When errors occur in CRD files, the station manager will be informed automatically in future

Criteria for rejection of CRD files

- Criteria have to be fixed for rejection of CRD files:
 - Record C2: Station 7825 uses longer format for last parameter A10
 - Record H3: Should all official satellite names and Ids be checked?
(official satellite name, COSPAR ID, SIC No., NORAD ID?)
 - Record 11: Violation of Bin Size especially for kHz lasers;
(Removing one observation at the beginning or end for 7237, e.g.)
- Should the status of Conception changed from validated to quarantine due to the earthquake?